

REMARKS

Claims 1-32 are pending. The drawings have been amended. The specification has been amended. Claims 1, 4, 6-11, 13, 15-17, 21-28, and 31-32 have been amended. The Abstract of the disclosure has been amended. No new matter has been added by way of this amendment. Reconsideration of the application is respectfully requested.

The drawings have been objected to for various reasons, including failing to comply with 37 C.F. R. 1.83(a). According to the Examiner, “it is unclear why the x-axis of graphs ‘G’, ‘J’, ‘O’, and ‘P’ are labeled both ‘Impedance’ and ‘Resonance Frequency’” and “because they do not include the following reference sign(s) mentioned in the description: ‘15’, ‘17’, and ‘20’” and “because they include the following reference sign(s) not mentioned in the description: ‘18’, ‘19’, ‘71’, ‘72’, ‘74’, ‘76’, ‘80’, ‘82’, ‘84’, ‘96’, ‘110’, ‘112’, ‘114’, ‘142’, ‘144’, ‘146’, ‘750’, ‘770’, ‘860’, ‘880’.” In response to these several objections, Applicants have amended the drawings to address each specific objection. Accordingly, reconsideration and withdrawal of the objection are respectfully requested.

The Abstract of the disclosure has been objected to because its length exceeds the 150-word limit. In response to this objection, Applicants have amended the Abstract of the disclosure such that it is now within the required word limit.

The disclosure of the objection has been objected to by the Examiner. According to the Examiner, “[o]n page 11, lines 27-28, it is unclear what it means to ‘show values that are exemplify a particular US system.’” In addition, “on page 17, line 2, Applicant refers to ‘104’ as a line while

and correct the problem and, as suggested by Senda, provided precise diagnostics quickly, automatically, and without destroying the device under test (0005-0007).

With respect to the foregoing, however, the following is noted. JP Patent No. 06-003305 to *Senda et al.* relates to a method for non-destructively inspecting piezo-electric elements for micro-cracks for a quick, automatic discrimination of the presence/absence of micro-cracks in a piezo-electric element with a high level of accuracy (see Purpose Statement of the patent abstract). According to this patent abstract, the frequency characteristics of the phase difference (phase angle) between the frequency characteristic and/or voltage and current of the impedance of a piezo-electric element is measured and the drive curve pattern indicating the measured frequency characteristic is measured. In addition, a curve pattern indicating the measured frequency characteristic is compared with the curve pattern of an element that is used as a reference. When both curve patterns are different from each other, it becomes possible to determine that micro-cracks exist in the element (see Constitution of the patent abstract).

In contrast, the calculation of phase data in the present claimed invention involves the calculation of impedance phase for the hand piece/blade which is determined by calculating the difference in frequency of the anti-resonance (i.e., the frequency with maximum impedance) and the resonance (i.e., the frequency with minimum frequency). This aspect of the invention is set forth on page 13, lines 4-10 of the specification. In the *Senda et al.* reference, the phase that is measured is the difference between the frequency characteristic and/or voltage and current of the impedance of a piezo-electric element. This is a different measurement than the impedance phase measurement set forth and claimed in independent claims 1 and 17, which is based on values at maximum and minimum resonance frequencies. It therefore follows that the combination of the *Sakurai et al.*

patent and the *Senda* et al. reference fails to teach or suggest the step of “obtaining magnitude impedance data and impedance phase data for the hand piece/blade,” as set forth and claimed in the present invention.

U.S. Patent No. 6,019,775 to *Sakurai* relates to an ultrasonic apparatus which performs treatments by utilizing an ultrasonic oscillation, and comprises a handpiece serving as a surgical tool and an apparatus body including a power source unit for supplying electric power to the handpiece (see Abs.). However, this patent fails to cure the deficiency of the system comprising the *Sakurai* et al. patent and the *Senda* et al. reference. Specifically, *Sakurai* also fails to teach the step of “obtaining magnitude impedance data and impedance phase data for a hand piece/blade.” In view of the foregoing, Applicants respectfully assert that the combined references, whether considered individually or in combination, fail to teach or suggest the invention as set forth in amended independent claims 1 and 17. Accordingly, independent claims 1 and 17 are patentable over the combination of the *Sakurai* patents and the *Senda* et al. reference.

In view of the patentability of amended independent claims 1 and 17, for the reasons above, dependent claims 2-16 and 18-32 are also patentable over the prior art.

In light of the foregoing amendments and remarks, this application should be in condition for allowance. Early passage of this case to issue is respectfully requested. However, if there are any questions regarding this Response, or the application in general, a telephone call to the undersigned would be appreciated since this would expedite the prosecution of the application for all concerned.

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Respectfully submitted,

By [Signature]

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